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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,625	04/22/2004	John William Alcorn	ROC920030352US1	7294

7590 06/23/2009

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ART UNIT	PAPER NUMBER
2191	

MAIL DATE	DELIVERY MODE
06/23/2009	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/829,625
Filing Date: April 22, 2004
Appellant(s): ALCORN ET AL.

Owen J. Gamon (Reg. No. 36,143)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on March 27, 2009 appealing from the Office action mailed on October 27, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The Examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The Appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,899,990	MARITZEN et al.	5-1999
6,269,373	APTE et al.	7-2001
6,748,373	MESSINGER et al.	6-2004
6,889,227	HAMILTON	5-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over **US 6,889,227 (hereinafter "Hamilton")** in view of **US 6,748,373 (hereinafter "Messinger")** and **US 5,899,990 (hereinafter "Maritzen")**.

As per **Claim 1**, Hamilton discloses:

- receiving a specification of a method in a container-managed persistence entity bean and a procedure in a backend data store *(see Column 4: 6-10, "The application server receives the database protocol commands or queries from the client computer system and a database bridge converts the database protocol commands to general computer programming language commands of applications running on the application server." and 33-46, "... when the client*

computer system attempts to access a database field, the request from the client is executed against the created map to determine the corresponding EJB command (e.g. method) for accessing the database field. The EJB command is invoked at the application server and performs the desired operation on the database field desired by the client computer system."; Column 6: 22-27, "After the SQL protocol commands are mapped to EJB objects 130, the objects are executed and the EJB objects 130 develop and send queries to the database 110 server 20. A database interface 140 processes the SQL query and accesses the database 150.");

- in response to the receiving, generating code in a helper class associated with the container-managed persistence entity bean, wherein the helper class determines a connector based on a connection factory type *(see Column 6: 14-25, "The database bridge 120 may be defined as a "bridge" class to implement its database protocol command conversion functions." and "The SQL bridge 120 contains a database bridge map 128 that has methods for mapping commands between the client application 104 and EJB objects. After the SQL protocol commands are mapped to EJB objects 130, the objects are executed and the EJB objects 130 develop and send queries to the database 110 server 20."; Column 8: 49-53, "After operations defined by EJB logic has been completed at the application server 18, the database is accessed from the application server 18 with a database protocol language corresponding to the database access request from the client computer system (step 632).")*;

- accessing the procedure in the backend data store via a backend-specific protocol and the connector, wherein the accessing the procedure in the backend data store further comprises invoking the procedure in the backend data store, wherein the code in the helper class performs the accessing and the invoking *(see Column 4: 51-56, "The client computer systems 14*

communicate in a database access protocol, such as SQL, to the application server 18 ..."; *Column 6: 1-9, "OLE-DB is a Microsoft COM API for database access. The Microsoft OLE-DB interface uses database drivers to talk to target databases." and 14-25, "After the SQL protocol commands are mapped to EJB objects 130, the objects are executed and the EJB objects 130 develop and send queries to the database 110 server 20.")*;

- receiving a specification of input and output records for the procedure in the backend data store *(see Column 7: 28-31, "The SQL commands, as represented in the table, specify a table, T, row, R, column, C, or universal character, such as "*", that is used for requesting multiple elements in a single command.")*; and

- mapping the input and output records between the method in the container-managed persistence entity bean and the procedure in the backend data store, wherein the output records comprise the results, and wherein a state of the container-managed persistence entity bean persists beyond a lifetime of an application that uses the container-managed persistence entity bean *(see Figure 4; Column 7: 20-28, "The database bridge map 128 maps EJB methods and properties, used to invoke a designated function in the database, to the SQL commands that perform the functions and to the database elements that are the target of the function. Thus, when the application server 18 receives an SQL command from the client computer system 14, the SQL command is matched to an EJB method that when executed performs the desired operation on the appropriate database element." and 31-62, "For example, if a client computer system initiated, from Visual Basic, a "select FirstName" command that command would be converted to an SQL command, such as SQL command 402. The SQL command 402, for example, is a database read command that reads table 1, row 1, column 1. The SQL command*

402 is mapped to a "getFirstName" method of a corresponding EJB and the "getFirstName" method is executed at the application server 18.").

However, Hamilton does not disclose:

- wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store, wherein the container marks transaction boundaries, wherein the container includes the container-managed persistence entity bean, and wherein the receiving further comprises receiving the specification of the method and the procedure from a deployer;

- wherein the deployer supplies the connection factory type; and

- wherein the code in the helper class calls an evaluator class and passes results of the procedure, wherein the evaluator class evaluates the results.

Messinger discloses:

- wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store, wherein the container marks transaction boundaries, wherein the container includes the container-managed persistence entity bean, and wherein the receiving further comprises receiving the specification of the method and the procedure from a deployer *(see Column 1: 41-65, "A typical Java 2 Enterprise Edition (J2EE) platform includes one or more containers. A container is a runtime used to manage application components and provide access to J2EE application programming interfaces (APIs). An EJB container typically hosts Enterprise JavaBean components, such as entity beans or session beans." and "A Java Database Connectivity (JDBC) API can provide a developer with the ability to connect to a relational*

database system. The API can allow transactional querying, retrieval, and manipulation from a JDBC-compliant database." and "The EJB 2.0 specification, set forth by Sun Microsystems, Inc., of Santa Clara, Calif., defines a mechanism known as container managed persistence (CMP) by which the EJB implementation maps data in an DBMS to entity beans. This mapping includes both mapping to values in a DBMS and mapping of relations between entities in the DBMS."; Column 3: 13-16, "Through tuning field groups carefully, EJB application deployers can reduce the traffic, both volume of data and number of round trips, to and from a database, thereby increasing performance." and 46-49, "This control can be accomplished, for example, by allowing an EJB deployer to specify which mapped data should be loaded aggressively and which should be faulted in as needed."); and

- wherein the deployer supplies the connection factory type *(see Column 3: 13-16, "Through tuning field groups carefully, EJB application deployers can reduce the traffic, both volume of data and number of round trips, to and from a database, thereby increasing performance." and 46-49, "This control can be accomplished, for example, by allowing an EJB deployer to specify which mapped data should be loaded aggressively and which should be faulted in as needed.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Messinger into the teaching of Hamilton to include wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store, wherein the container marks transaction boundaries, wherein the container includes the container-managed persistence entity bean, and wherein the receiving further comprises

receiving the specification of the method and the procedure from a deployer; and wherein the deployer supplies the connection factory type. The modification would be obvious because one of ordinary skill in the art would be motivated to utilize a runtime environment to manage application components and provide access to J2EE application programming interfaces (APIs) *(see Messinger – Column 1: 41-65)*.

Maritzen discloses:

- wherein the code in the helper class calls an evaluator class and passes results of the procedure, wherein the evaluator class evaluates the results *(see Column 9: 6-16, "The run( ) method 310 submits the SQL query to the selected method in step 434." and "The selected method formats the retrieved columns 440 in accordance with a designation of the received SQL query and stores the retrieved columns in the form of a String.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Maritzen into the teaching of Hamilton to include wherein the code in the helper class calls an evaluator class and passes results of the procedure, wherein the evaluator class evaluates the results. The modification would be obvious because one of ordinary skill in the art would be motivated to format the database information in accordance with the client's request *(see Maritzen – Column 9: 6-16)*.

2. **Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hamilton** in view of **Messinger** and **Maritzen** as applied to Claim 1 above, and further in view of **US 6,269,373 (hereinafter "Apte")**.

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and Hamilton further discloses:

- wherein the backend data store comprises a relational database *(see Column 6: 27-31, "The data of an SQL database is relational. That is, the database stores information in a table or relation format. A table has a set of rows and columns with columns defining fields in a row, and rows defining a collection of fields that represents one instance or record of data.").*

However, Hamilton, Messinger, and Maritzen do not disclose:

- wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database.

Apte discloses:

- wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database *(see Column 16: 57-61, "For example, a container implemented on top of an RDBMS may manage persistence by storing each bean's data as a row in a table.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Apte into the teaching of Hamilton to include wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database. The modification would be obvious because one of ordinary skill in the art would be motivated to maintain entity bean data *(see Apte – Column 16: 57-61).*

As per **Claim 3**, the rejection of **Claim 1** is incorporated; however, Hamilton, Messinger, and Maritzen do not disclose:

- wherein the backend data store comprises a non-relational database.

Apte discloses:

- wherein the backend data store comprises a non-relational database *(see Column 6: 54-57, "The above mentioned methods could be written to access other backend systems (i.e. CICS, IMS, MQ, SAP, etc.) and should not be restricted to just JDBC or database access.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Apte into the teaching of Hamilton to include wherein the backend data store comprises a non-relational database. The modification would be obvious because one of ordinary skill in the art would be motivated to utilize and access non-relational databases *(see Apte – Column 6: 54-57).*

(10) Response to Argument

Claim 1

In the Appeal Brief, Appellant argues:

a) The purpose of Hamilton is to enable "a computer application designed to operate in a two tier computer environment" to "operate in a three tier computer environment, without specific programming for the three tier computer environment," as described by Hamilton at column 2, lines 33-37.

Hamilton explains its first, second, and third tiers at column 1, lines 39-52: "In a two tier environment, a client computer system (first tier) directly communicates with a database system (second tier) to access data. The second tier is often a relational database that uses Structured

Query Language (SQL) as the protocol language for communicating with other systems. … In a three tier environment, a client system (first tier) has a GUI that communicates with an application running on an application server (second tier) which in turn communicates with a database server (third tier) for access to and storage of data."

Hamilton accomplishes this purpose by "[a]n application server [receiving] the first database call from a client computer system and [mapping] the first database call to the general programming language call," as described by Hamilton at column 2, lines 46-49. These mapped or converted commands are then "executed on the application server to access the database," as described by Hamilton at column 4, lines 13-14.

Thus, the Hamilton converted commands include whatever calls to the database that they need in order to access the database, which contradicts and teaches away from "the container-managed persistence entity bean does not include the calls to the backend data store," as recited in claim 1.

(See Appeal Brief – page 16.)

Examiner's response:

a) Examiner disagrees. Appellant's arguments are not persuasive for at least the following reasons:

First, with respect to the Appellant's assertion that Hamilton contradicts and teaches away from "the container-managed persistence entity bean does not include the calls to the backend data store" as recited in Claim 1, the Examiner respectfully submits that Hamilton does not teach "the container-managed persistence entity bean does not include the calls to the

backend data store." Instead, Messinger is relied upon for its teaching of "wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store" *(see Column 1: 41-65, "A typical Java 2 Enterprise Edition (J2EE) platform includes one or more containers. A container is a runtime used to manage application components and provide access to J2EE application programming interfaces (APIs). An EJB container typically hosts Enterprise JavaBean components, such as entity beans or session beans." and "The EJB 2.0 specification, set forth by Sun Microsystems, Inc., of Santa Clara, Calif., defines a mechanism known as container managed persistence (CMP) by which the EJB implementation maps data in an DBMS to entity beans. This mapping includes both mapping to values in a DBMS and mapping of relations between entities in the DBMS.")*. Thus, the Appellant's argument regarding Hamilton contradicts and teaches away from "the container-managed persistence entity bean does not include the calls to the backend data store" as recited in Claim 1 is, at best, moot.

Second, the Examiner further submits that Hamilton discloses a technique of using EJB components for accessing a database by mapping EJB components to the database fields and properties *(see Column 4: 33-46)*. "[T]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed …" *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). In the present case, the Appellant has not demonstrated that Hamilton criticizes or discredits the claimed feature of "the container-managed persistence entity bean does not include the calls to the backend data store" as recited

in Claim 1. Thus, Hamilton does not teach away from "the container-managed persistence entity bean does not include the calls to the backend data store" as recited in Claim 1.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 1 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

b) Further, if Hamilton were hypothetically modified so that "the container-managed persistence entity bean does not include the calls to the backend data store," as recited in claim 1, then Hamilton would no longer be able to execute the mapped or converted commands "on the application server to access the database," as described by Hamilton at column 4, lines 13-14, in order to accomplish the Hamilton purpose because the Hamilton "general programming language call may be an Enterprise Java Bean (EJB) call" (Hamilton at column 2, lines 43-45) and "[i]n response to executing the general computer language programming call, the application server generates the second database call" (Hamilton at column 2, lines 48-51). But, since Hamilton was hypothetically modified so that its bean (its general programming language call) no longer includes the call to the backend store, executing the Hamilton programming language call (bean) would no longer result in a call to the Hamilton database, so Hamilton would no longer convert a database call received from its client (first tier) into a call to its database server (third tier), so Hamilton would no longer enable "a computer application designed to operate in a two tier computer environment" to "operate in a three tier environment" (Hamilton at column 2, lines 29-36), so the Hamilton stated purpose would be destroyed by the hypothetical modification, which is compelling evidence of non-obviousness.

(See Appeal Brief – page 16 to page 17.)

Examiner's response:

b) Examiner disagrees. With respect to the Appellant's assertion that since Hamilton was hypothetically modified so that its bean (its general programming language call) no longer includes the call to the backend store, executing the Hamilton programming language call (bean) would no longer result in a call to the Hamilton database, so Hamilton would no longer convert a database call received from its client (first tier) into a call to its database server (third tier), the Examiner respectfully submits that Hamilton discloses using EJB components for accessing a database by mapping EJB components to the database fields and properties *(see Column 4: 33-46)*. As the Appellant is likely aware and disclosed by Messinger, an EJB container typically hosts EJB components, such as entity beans or session beans *(see Column 1: 45-47)*. Thus, by incorporating the teaching of Messinger into the teaching of Hamilton, one of ordinary skill in the art would readily recognize that Hamilton's EJB components are hosted by EJB containers. Furthermore, the Appellant already acknowledges in the "Background" section of the originally-filed specification that if an entity bean has container-managed persistence, the EJB container handles all database access required by the entity bean. And that the entity bean's code contains no database access calls *(see pages 3 and 4)*. So, if Hamilton was hypothetically modified to host the EJB components in EJB containers such that "the container-managed persistence entity bean does not include the calls to the backend data store," Hamilton's invention would still function as originally intended because those of ordinary skill in the art would readily comprehend that it is the EJB container that executes the mapped or converted commands on the application server to

access the database, and not the entity bean as averred by the Appellant. In other words, the hypothetical modification of Hamilton only involves allowing the EJB containers hosting the EJB components to generate access calls to the database, which is well-known in the art, and thus, Hamilton would still convert a database call received from a client system (first tier) into a call to a database server (third tier). The underlying principle of operation of Hamilton's invention remains unaffected. Thus, in view of the state of the art and the teaching of Messinger, one of ordinary skill in the art would be motivated to modify Hamilton's invention by hosting the EJB components in EJB containers in order to utilize a runtime environment to manage application components and provide portable access to different databases from J2EE application programming interfaces (APIs) *(see Messinger – Column 1: 41-65)*.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 1 is proper and therefore, maintained.

Claims 2 and 3

In the Appeal Brief, Appellant argues:

a) Apte at column 6, lines 45-51 and column 7, lines 18-21 recites: "Server object 402 contains the actual business logic that is implemented using application programming interfaces (APIs) that utilize the Java-defined Java database connectivity (JDBC) structured query language (SQL) database access interface, which provides uniform access to a wide range of relational databases. In the depicted example, these databases may be found in database 404. Server object 402 contains methods used to provide needed functions invoked from client object 400. The

above mentioned methods could be written to access other backend systems (i.e. CICS, IMS, MQ, SAP, etc.) and should not be restricted to just JDBC or database access. … In the depicted example, two Java beans may be employed that implement the client object 400 and server object 402."

Thus, in Apte, a Java bean, which implements the server object 402, contains the business logic that utilizes the SQL database interface, which provides access to relational databases. Thus, Apte contradicts and teaches away from claim 1, which requires that the "entity bean does not include the calls to the backend data store."

(See Appeal Brief – page 18.)

Examiner's response:

a) Examiner disagrees. Appellant's arguments are not persuasive for at least the following reasons:

First, with respect to the Appellant's assertion that Apte contradicts and teaches away from Claim 1, which requires that the "entity bean does not include the calls to the backend data store," the Examiner respectfully submits that Apte is relied upon for its teachings of "wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database" in Claim 2 and "wherein the backend data store comprises a non-relational database" in Claim 3. Thus, the Appellant's argument regarding Apte contradicts and teaches away from Claim 1, which requires that the "entity bean does not include the calls to the backend data store" is, at best, moot.

Second, the Examiner further submits that Apte discloses a technique of mapping references to a CORBA server containing an Enterprise JavaBean to back-end data store using primitive data types *(see Column 16: 66 and 67 to Column 17: 1-3)*. "[T]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed ..." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). In the present case, the Appellant has not demonstrated that Apte criticizes or discredits the claimed feature of "the container-managed persistence entity bean does not include the calls to the backend data store" as recited in Claim 1. Thus, Apte does not teach away from "the container-managed persistence entity bean does not include the calls to the backend data store" as recited in Claim 1.

Therefore, for at least the reasons set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 1-3 are proper and therefore, maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the Examiner in the Related Appeals and Interferences section of this Examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Qing Chen

/Q. C./

Examiner, Art Unit 2191

Conferees:

/Wei Y Zhen/

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